

### REMARKS

Applicants confirm election of Group I (claims 1-10), with traverse, in a teleconference between Applicants' representative and the Examiner on August 7, 2003. Claims 1-10 are pending. Claims 11-25 have been withdrawn by the Examiner.

#### Rejections under 35 U.S.C. § 102

The Examiner has rejected claims 1-5 under 35 U.S.C. § 102(a) as being anticipated by Read *et al.* "Low Temperature Performance of Lambda-Manganese Oxide in Lithium Primary Batteries." ("Read"). See pages 3-4 of the Office Action. The Examiner has also rejected claims 1-3 under 35 U.S.C. § 102(b) as being obvious over U.S. Patent No. 4,312,930 to Hunter ("Hunter") or Giwa *et al.* "Lithium Primary Envelope Cells" ("Giwa"). See pages 4-6 of the Office Action. Claim 1 is independent.

Applicants have discovered an electrochemical cell including a cathode, an anode, and an electrolyte. The cathode includes lambda-manganese dioxide. The anode includes lithium. The cell has an average closed circuit voltage of about between about 3.8 and 4.1V and **a specific discharge capacity to a 3V cutoff of greater than 130 mAh/g at a nominal discharge rate of 1 mA/cm<sup>2</sup>**. See independent claim 1.

Read does not disclose a cell including a cathode including lambda-manganese dioxide, and anode including lithium, and having an average closed circuit voltage of about between about 3.8 and 4.1V and a specific discharge capacity to a 3V cutoff of greater than 130 mAh/g at a nominal discharge rate of 1 mA/cm<sup>2</sup>. See Fig. 1 of Read. Hunter also does not disclose a cell including a cathode including lambda-manganese dioxide, and anode including lithium, and having an average closed circuit voltage of about between about 3.8 and 4.1V and a specific discharge capacity to a 3V cutoff of greater than 130 mAh/g at a nominal discharge rate of 1 mA/cm<sup>2</sup>. See Figure 1 of Hunter. Giwa also does not disclose a cell including a cathode including lambda-manganese dioxide, and anode including lithium, and having an average closed circuit voltage of about between about 3.8 and 4.1V and a specific discharge capacity to a 3V cutoff of greater than 130 mAh/g at a nominal discharge rate of 1 mA/cm<sup>2</sup>. See Figure 6 of Giwa.

There is nothing in Read, Hunter or Giwa that describes a cell including a cathode including lambda-manganese dioxide, and anode including lithium, and having an average closed circuit voltage of about between about 3.8 and 4.1V and a specific discharge capacity to a 3V cutoff of greater than 130 mAh/g at a nominal discharge rate of 1 mA/cm<sup>2</sup>. Indeed, Fig. 1 of Read indicates that specific capacity of the device prepared in Read is significantly lower than 130 mAh/g at a nominal discharge rate of 1 mA/cm<sup>2</sup>. In addition, Fig. 1 of Hunter indicates that specific capacity of the device prepared in Hunter is significantly lower than 130 mAh/g at a nominal discharge rate of 1 mA/cm<sup>2</sup>. Thus, neither Read nor Hunter anticipate independent claim 1, or claims that depend therefrom. Finally, Fig. 6 of Hunter indicates that specific capacity of the device prepared in Hunter is significantly lower than 130 mAh/g at a nominal discharge rate of 1 mA/cm<sup>2</sup>. Thus, neither Read, Hunter, nor Giwa anticipate independent claim 1, or claims that depend therefrom

Applicants respectfully request reconsideration and withdrawal of these rejections.

### **Rejections under 35 U.S.C. § 103**

#### **Claims 1-3**

The Examiner has rejected claims 1-3 as being unpatentable under 35 U.S.C. § 103(a) over Hunter or Giwa. See pages 3-5 of the Office Action. Claim 1 is independent.

As discussed above, Applicants have discovered a cell including a cathode including lambda-manganese dioxide, and anode including lithium, and having an average closed circuit voltage of about between about 3.8 and 4.1V and a specific discharge capacity to a 3V cutoff of greater than 130 mAh/g at a nominal discharge rate of 1 mA/cm<sup>2</sup>. See independent claim 1. Neither Hunter nor Giwa teach or suggest a cell including a cathode including lambda-manganese dioxide, and anode including lithium, and having an average closed circuit voltage of about between about 3.8 and 4.1V and a specific discharge capacity to a 3V cutoff of greater than 130 mAh/g at a nominal discharge rate of 1 mA/cm<sup>2</sup>. Neither Hunter nor Giwa suggest such a cell. Nothing in Hunter nor Giwa teaches or suggests that a cell including a cathode including lambda-manganese dioxide, and anode including lithium, and having an average

closed circuit voltage of about between about 3.8 and 4.1V and a specific discharge capacity to a 3V cutoff of greater than 130 mAh/g at a nominal discharge rate of 1 mA/cm<sup>2</sup>. Without such a teaching or motivation, Hunter or Giwa cannot render independent claim 1 obvious.

Thus, for at least these reasons, independent claim 1, and claims that depend therefrom, are patentable over Hunter or Giwa. Applicants respectfully request reconsideration and withdrawal of this rejection.

#### Claims 6-10

The Examiner has rejected claims 6-10 under 35 U.S.C. § 103(a) as being unpatentable over Read in view of U.S. Patent No. 5,294,499 to Furukawa *et al.* ("Furukawa"). See pages 6-7 of the Office Action. Claims 6-8 depend from independent claim 1. Claim 10 depends from independent claim 9.

Applicants have discovered an electrochemical cell including a cathode, an anode, and an electrolyte. The cathode includes lambda-manganese dioxide. The anode includes lithium. The cell has an average closed circuit voltage of about between about 3.8 and 4.1V and **a specific discharge capacity to a 3V cutoff of greater than 130 mAh/g at a nominal discharge rate of 1 mA/cm<sup>2</sup>**. See independent claims 1 and 9.

The Examiner relies on Furukawa for teaching a manganese dioxide having "a BET surface area of 41.6 m<sup>2</sup>/gram and the grain sizes of 0.1 to 20 um" (see page 6 of the Office Action). However, Furukawa does not cure the deficiencies of Read discussed above. Specifically, Furukawa does not teach or suggest a cell including a cathode including lambda-manganese dioxide, and anode including lithium, and having an average closed circuit voltage of about between about 3.8 and 4.1V and a specific discharge capacity to a 3V cutoff of greater than 130 mAh/g at a nominal discharge rate of 1 mA/cm<sup>2</sup>. Moreover, there is no motivation to combine the teachings of Read with the teachings of Furukawa. Indeed, the Examiner has not provided any motivation to combine these references. Thus, a *prima facie* case of obviousness has not been presented.

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Thus, independent claims 1 and 9, and claims that depend therefrom, are patentable Read in view of Furukawa. Applicants respectfully request reconsideration and withdrawal of these rejections.

**CONCLUSION**

Applicants believe that the application is in condition for allowance, and such action is requested. However, in order to expedite prosecution of this case, Applicants' representative is more than willing to discuss any of the Examiner's remaining concerns or issues, and can be reached at 202-783-5070.

Please apply any charges not covered, or any credits, to Deposit Account 06-1050.

Respectfully submitted,

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